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ABSTRACT

A longitudinal study examined the development over the primary school years of the writing skills of children from the time they entered first grade until they completed grade three. In order to identify the nature of the literacy-related home experience of these children, interviews were conducted with each child (three classes in all) as he or she entered the program as well as at the conclusion of the project, and parents were asked to complete questionnaires. Each child's general level of intellectual functions, verbal skills, cognitive styles, and so forth was tested at the beginning of the project. At the end of each school year, standardized reading and writing tasks were administered. Although the patterns emerging from this study represent a relationship between familial, particularly maternally-mediated, literacy-related activities and literacy development in school, further explorations of these data are warranted. Significant correlations between child, family, home variables, reading and writing were observed. (Fifteen figures are included, and an appendix presenting a holistic scoring guide is attached.(NH)

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Home Factors in Primary School Written Expression

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Paper presented as part of a symposium entitled "Background and conversational influences on literacy and communication skills in the classroom," G. Bonitatibus (Chair), at the annual meeting of the American Educational Research Association, San Francisco, March, 1989. This research was supported by grants from the Social Sciences and Humanities Research Council of Canada, the University of New Brunswick, and the N.B. Department of Education. Authors' address is: Psychology Department, University of New Brunswick, Fredericton, N.B., Canada, E3B 6E4.

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Wells (1986) reports that up until the time that children enter school, they show few systematic social group differences in linguistic sophistication (although the language of children at the extremes of the distribution tends to reflect their home backgrounds). By age 10, however, the British children in Wells' study clearly reveal family environmental effects in their school literacy performance; effects which he shows reflect parental literacy values. Familial attitudes and values which underlie exposing children to books in the home and reading regularly to them paves the way for effective literacy involvement in school. Applebee, Langer, and Mullis (1986) report that written expression in US schools at grades 4, 8, and 11 correlate with home background factors: Reading materials in the home and parental education relate to writing performance.

Researchers agree that simple experience in writing and writing instruction alone are not guaranteed facilitators of writing skill development. Experienced readers are better writers. Reading often vies successfully with writing as an effective precursor of writing competence (Krashen, 1984).

For many years, researchers have explored precursors of reading skill development. It is well recognized that certain constellations of home factors affect school literacy performance, but data are incomplete regarding the specific family variables affecting the development of reading, and to date, less research has been conducted to date relating home experience to writing skill development. The experiential precursors of writing development are as yet incompletely understood.

We have conducted a longitudinal study of the development over the primary school years of skills in written expression (Cameron, Linton, & Hunt, 1988). We worked with classes of children from the time they entered first grade until they completed grade three. Our goals were to examine growth in written communication facility under favourable curricular conditions; and with that in mind, we designed a wide range of stimulating contexts for writing. Further, we evaluated the effects of access to word processors for some of the writing. We have been asking questions regarding the nature of writing tasks that promote relatively sophisticated writing, and with what particular types of student? Under what circumstances do primary school children best exhibit in writing their already impressively extensive knowledge base, as well as their developing awareness of rhetorical techniques and conventions? And for whom is access to a word processor an effective support tool? Our data base includes all of the writing produced by the children during the five hours a week that we spent with them over their first three years of school.

Three classes of children enrolled in schools in Fredericton, NB, Canada were participants. These classes were chosen by school authorities as being representative of children in the district at large. Fredericton is a middle class community of about 50,000 residents. The major provincial anglophone university is situated in Fredericton, and it is the provincial capital. Nearby is an army base, so the primary "industries" of the city are government/civil service, university, and military. The three classes were treated differently in our programme. One participated only as a comparison group, receiving all

assessment and progress evaluation measures, but no interventions. The other two classes participated in one full day a week of "Writing Workshops". One of our group (A.K. Hunt) was responsible for designing and implementing writing activities which both integrated with the provincial curriculum and which also focussed on facilitating writing across the curriculum. We used a process-based approach to writing. One of these classes had six computers in the classroom while we were there, whereas the other had none, but nevertheless, participated in the same lessons as were arranged for the computer-equipped class.

We periodically monitored the performance of all these children in the following ways: At the beginning of the project, we tested the children's general level of intellectual functioning, their verbal skills, cognitive style, and so forth. At the end of each school year, we administered standard reading and writing tasks. In order to identify the nature of the literacy-related home experiences of these children, I interviewed each child as she or he entered the programme as well as at the conclusion of the project. Further, we queried parents with questionnaires, both about their own educations and occupations, as well as about some of the literacy-related activities in which they might engage with their children. Today, I will report to you the results of these inquiries as they relate to the children's reading and writing, focussing on the questions relating most specifically to writing.

Figure 1 represents the hypothesized interrelationships between the groups of variables we have chosen to explore here. Parental education and occupational ranks are expected to be central to factors in the children's personal psychometric profiles, to their home experience, as well as to school reading and writing performance. Reading and writing are expected to be closely associated, and the home factors we probed were expected to relate particularly to writing. Now let me tell you how we operationalized these variables and show what was the nature of their distributions.

Family education and social status. As I have indicated already, our community is rather narrowly middle class, and so is our sample of children. You can see in Figure 2 the distribution of parental occupational rankings. The scale we use is Blishen and McRobert's (1976) index devised specifically for Canada. It is based on three variables: Education level, income, and prestige (derived from the work of Pineo and Porter). The range of fathers' occupations is from physician-surgeons, lawyers, and university teachers to cooks and janitor-cleaners. The mean paternal occupation is in the sales occupations and foreman range, with the modal occupation being supervision in sales occupations. Mothers' occupations range from university teaching to baby-sitting, custodial work and laundry pressing. The mean (and modal) maternal occupation is in the range of secretary to elementary school teacher. Figure 3 shows the distribution of parental educational attainments. This is a well-educated population, particularly by Canadian standards.

Child characteristics. It will, therefore, not be too surprising to hear that children in the sample perform somewhat above average on Raven's Coloured Progressive Matrices, and on the Peabody Picture

Vocabulary Test. They appear to be somewhat reflective on the Matching Familiar Figures Test. The distributions for these measures are shown in Figures 4, 5, and 6.

Home environment. We queried parents regarding a number of factors which we anticipated, on the basis of the research literature, to relate to children's reading and writing in school. We will focus here on questions relating to writing performance. A number of our questions were unsuccessful in differentiating participants. For instance, questions regarding the amount of reading material reported to be in the home was high in the majority of cases. Most parents reported reading to their children when they were very young, and continuing to read frequently up to grade three. The restricted nature of our sample, or our longitudinal interventions, or both of these factors might have biased these findings. Further, our data on TV viewing practices have yet to be of help in discriminating children with more or less school literacy competence. However, questions regarding the age at which the child was reported first to print (essentially, before as opposed to after kindergarten: Figure 7) and reports of third graders' substantive writing (viz., writing thank-you notes, invitations and letters) at home (Figure 8) do discriminate between children. These parental reports of literacy-related activities are confirmed by the children's interview schedules which were taped at the beginning of grade one, and at the end of grade three. When children start first grade (and New Brunswick is one of two provinces in Canada lacking state-supported kindergartens), their report of having a library card differentiates children, as does whether they go to the public library, and whether they like to write in third grade. (Distributions are in Figures 9 to 11).

Reading. To assess reading performance, we regularly presented the children with cloze reading comprehension passages (Figures 12 and 13). Dissatisfaction with cloze tests for tapping meaning construction in reading resulted in our giving the children Goodman and Burke's (1972) Reading Miscue Inventory oral reading task in grade two. Performance on this technique is summarized by one scale representing the proportion of miscues representing meaning distortions (Figure 14).

Writing. Whilst a variety of techniques have been used to assess reading performance over the three years, with different measures being appropriate for different types of writing, a holistic score was developed as a general assessment of writing achievement at the end of each of the three years. (McClement, 1988). This score relates significantly to several of our more specific textual assessments like type-token ratios, and tallies of number of different words, indices in which we have some confidence. At the end of each of the three years, scripts for "going to McDonald's" were elicited from each child, and it is these scripts which were evaluated holistically. Examination of the scoring standard in Appendix A will illuminate the source of the different shapes of the distributions of scores achieved by each grade as seen in Figure 15.

School differences were small and unsystematic, so the three classes were combined. Table 1 gives the significant correlations between factors. When legitimate, Pearson's correlational coefficients were computed, otherwise, Spearman's or Kendall's coefficients are reported.

Child characteristics (Rows 1, 2, and 3). With regard to the psychometric child-measures, which we chose for being somewhat independent of eachother, we see strong relationships with family variables, especially mothers' education, and most especially with the Peabody standard score. Also, these tests, at the beginning of year one, relate to reading performance over the three years. Relationships with writing are more modest, replicating previous findings (Cameron, et al, 1987). It is in fact these modest associations which precipitated our current exploration of family variables and home background in order to get more explanatory power over our longitudinal data set.

Family variables (Columns/rows 4, 5, and 6). There is a strong set of intercorrelations between these four indices, and overall, they relate to the other groups of variables. The most ubiquitous family variable is education, particularly mother's education, which relates to almost all performance indices.

But this global look does not identify the specific factors in the home which might elucidate the relationships between school literacy and personal and familial characteristics. This is our preliminary attempt to probe certain specifics that instantiate the literacy values at home which provide the support that mediates our sample's written expression at school. It is perhaps appropriate to take a more microcosmic view of the home experience dimensions which we tapped by means of our interviews and questionnaires.

Home experience (Columns/rows 8, 9, 10, 11, and 12). Home experience seems more loosely connected with child characteristics (except for third grade functional writing at home), nor are family variables tightly associated. However, the child's reading and writing performance at school has interesting ties to home experience variables. Children who write functionally at home have high psychometric scores, and high-scoring parents, began to print early, and read and write well in our programme. Third graders who report that they like to write score well on our third grade script assessment and, incidentally, have high-scoring mothers. A child entering school with a public library card continues to go to the library through grade three, writes well at the end of first grade, and likes to write at the end of third grade (she or he is also likely to have a well-educated father). Third grade library frequenters have well educated mothers and tend to read well in grade two, and write well in grade three. Perhaps most important of our findings is the fact that the age at which a child is first reported to have printed relates strongly to our indices of reading and writing.

Reading indices (Columns/rows 13, 14, and 15.). As can easily be seen, reading is tightly bound to writing performance, and child characteristics and family variables bear powerfully on reading. Not surprisingly, the home experience questions reported here, designed as they were to identify specific correlates of writing were not so directly related to reading.

Writing scores (Columns 16, 17, and 18). As we have reported before (Cameron, et al, 1987), psychometric scores are less good predictors of writing than of reading. Family variables, especially

mothers' education show strong correlations with writing, however. Home experience relationships do provide clues as to the nature of home support which are likely to reflect parental, especially maternal educational values, and even more specifically, maternal literacy values.

The patterns emerging here represent a relationship between familial, particularly maternally mediated literacy-related activities, and literacy development in school. Children who take pencil in hand at an early age, who have a library card at school entrance, and who continue to frequent their public library tend to write well. Children who have highly educated mothers tend more frequently to write functionally at home, report liking to write, and indeed write texts of a high quality as measured holistically. These correlations confirm with our somewhat restricted sample previous researchers' reports, and they emphasize the importance of reading to writing. The mother who places pencils in the hand of her preschooler, and who provides the necessary scaffolding for her third grader to write thank-you letters, and other instances of substantive writing is supporting activities she probably values highly.

Our measures of general level of intellectual functioning and cognitive style are poor predictors of written expression. Even our classroom interventions showed no systematic group performance effects. Reading comprehension as measured by cloze passages and meaning construction in miscue analysis, both techniques which involve verbal problem-solving processes in meaning construction, which appear closely related to written expression are indeed strong correlates of writing performance. Our suspicions were confirmed that it would be inappropriate to describe or try to explain the performance of the children in our sample without making some effort to delineate the context outside school out of which literacy competence is developed. Clearly, further explorations of these data are warranted. A glimpse of one of our young participant/colleagues' third year interview (Appendix B) reveals the depth and complexity of the issues raised in representing home background variations in support for literacy development. This area deserves better articulated questions than we were able to devise, and more sophisticated methods of analysis of the responses elicited. This report only scratches the surface of the information provided by our informants. We are now performing other analyses on these data, and are identifying what other better questions we might ask next time. This is some of what Mary told us.

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Table 1. Significant correlations between child, family, home variables, reading and writing.

	Raven	PPVT	MFFe	Father's rank	Father's educ	Mother's rank	Mother's educ	Writes functionally	Likes to write	Has library card	Goes to library	Age first printed	Cloze Grade 1	RMI Grade 2	Cloze Grade 3	Holistic Grade 1	Holistic Grade 2	Holistic Grade 3
1 Raven			-.61				.24	.21					.40	-.34				
2 PPVT				-.39	.26	-.38	.41	.17				-.25	.28	-.45	.36	.29	.27	.32
3 MFFe					-.28		-.29						-.42	.28		-.34		
4 Father's rank					-.72	.29	-.49	-.36		.24			.33			-.27		
5 Father's educ.						-.47	.59			-.28			.44	-.35		.32		.30
6 Mother's rank							-.73		.46				.37		-.31			-.29
7 Mother's educ.								.19	.30		-.22		.45	-.45	.36	.27	.34	.53
8 Writes functionally												-.34	.49		.24			.22
9 Likes to write										-.25								.34
10 Has library card											.34							-.24
11 Goes to library														.28		.23		
12 Age first printed													-.36	.43	-.43	-.31	-.27	-.36
13 Cloze Grade 1														-.62	.52	.53	.48	.43
14 RMI Grade 2															-.61	-.40	-.24	-.44
15 Cloze Grade 3																.50	.54	.55
16 Holistic Grade 1																	.33	.32
17 Holistic Grade 2																		.46
18 Holistic Grade 3																		

Figure 1. Sources of the relationships between groups of variables.

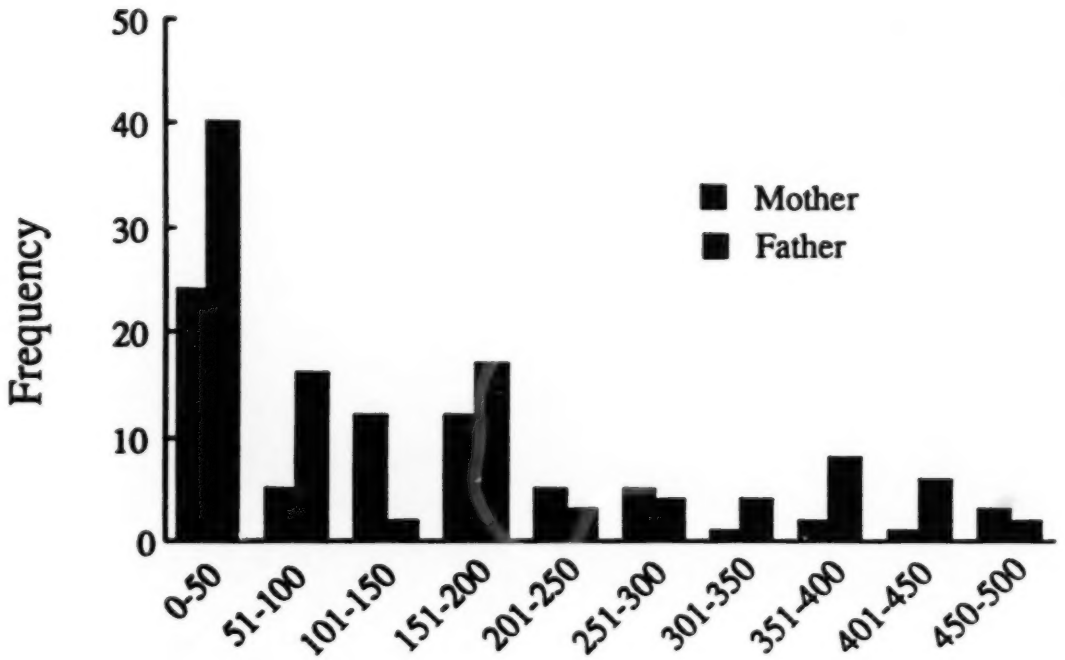

Figure 2 Mothers' and fathers' Blishen ranking

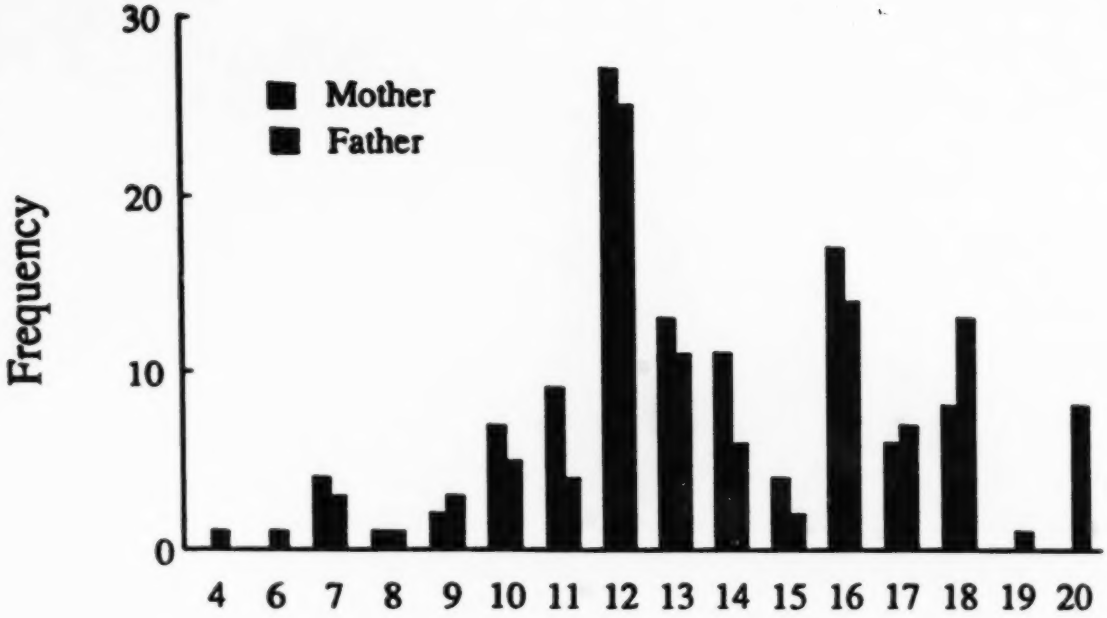

Figure 3. Mothers' and fathers' education level

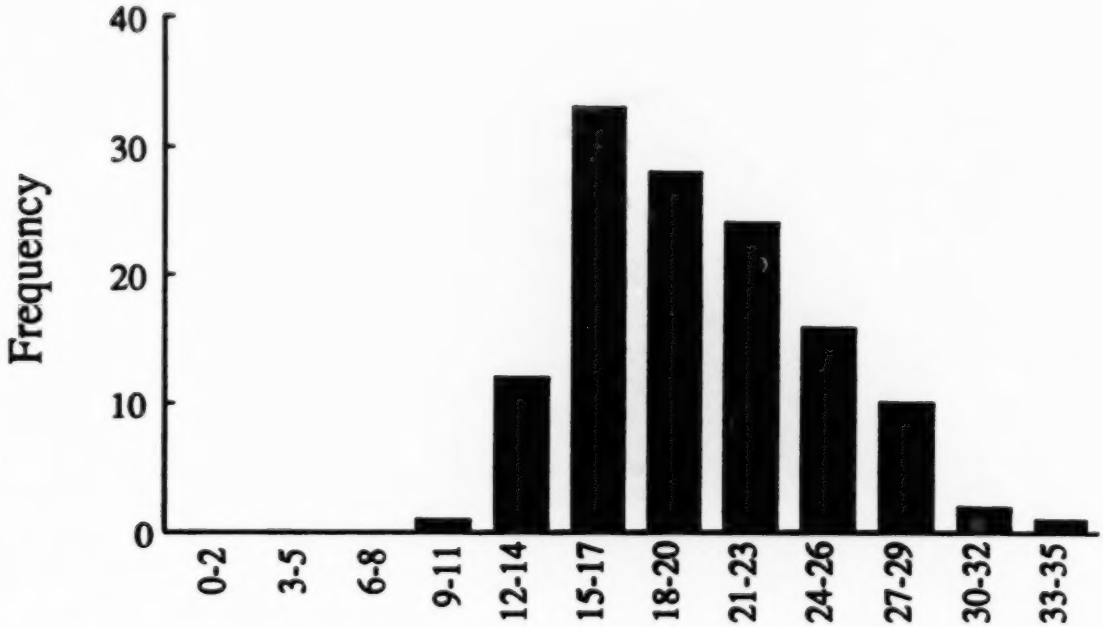

Figure 4. Progressive Matrices Test scores

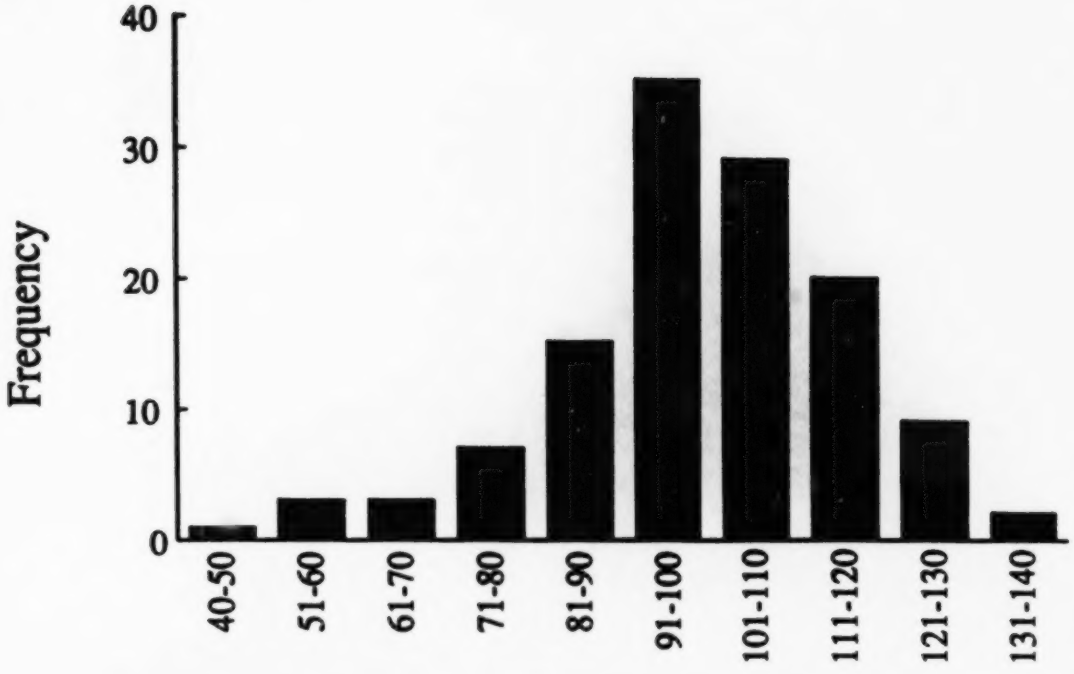

Figure 5. Peabody Picture Vocabulary test scores (standardized)

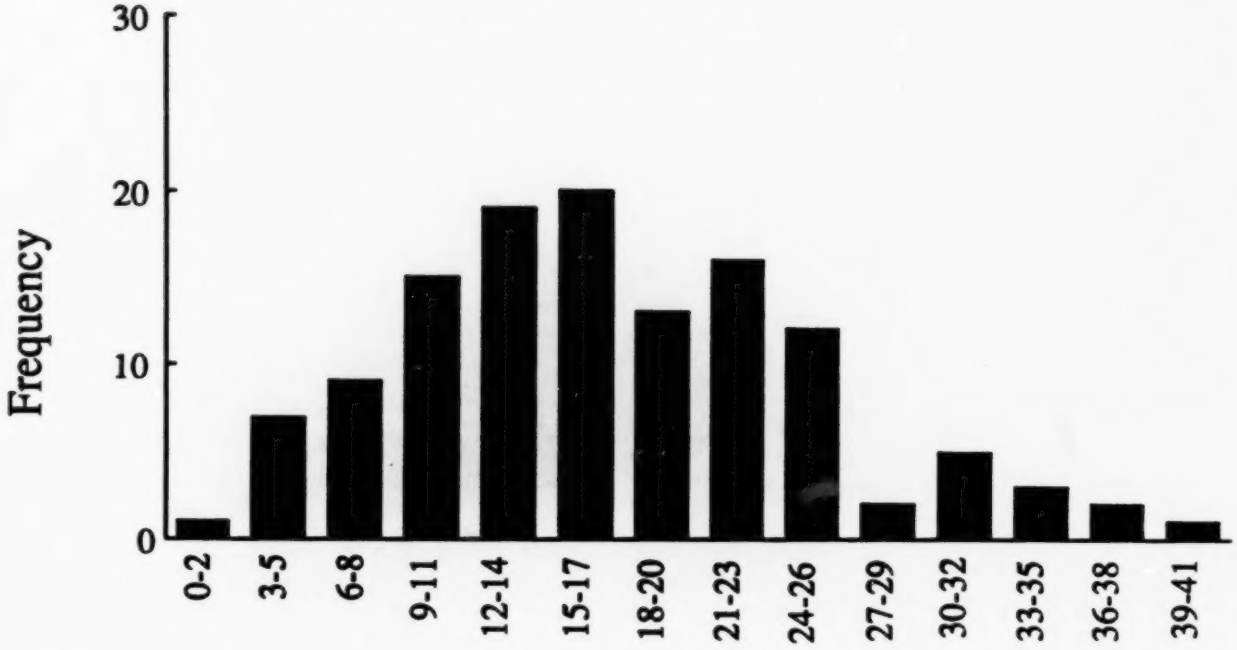

Figure 6. Matching Familiar Figures test scores

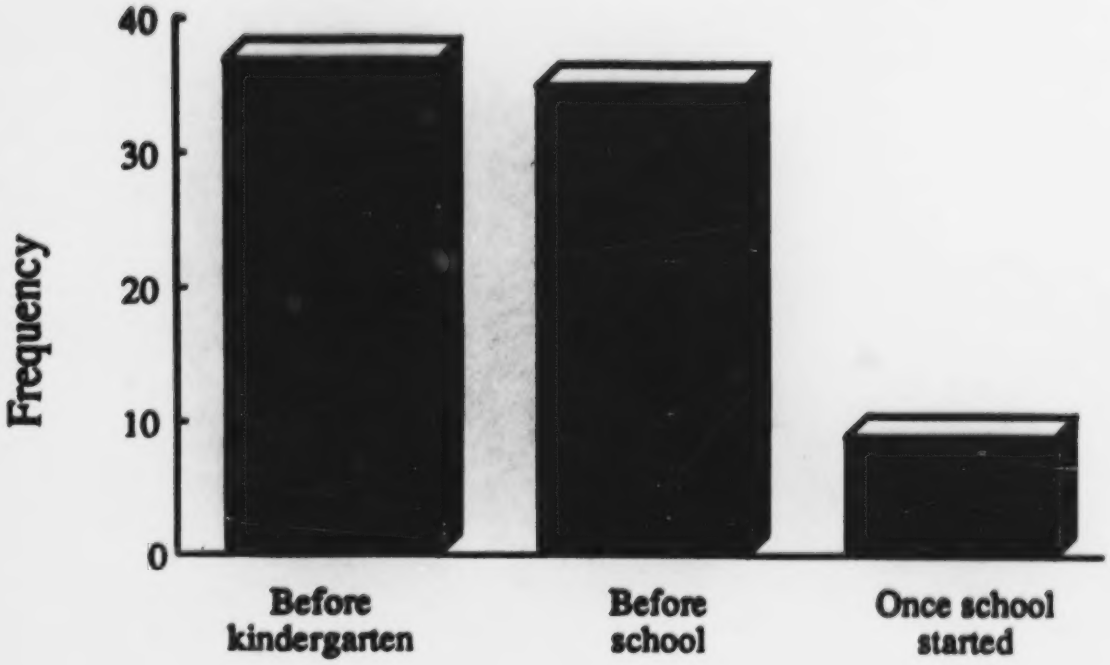

Figure 7. When did your child first print?

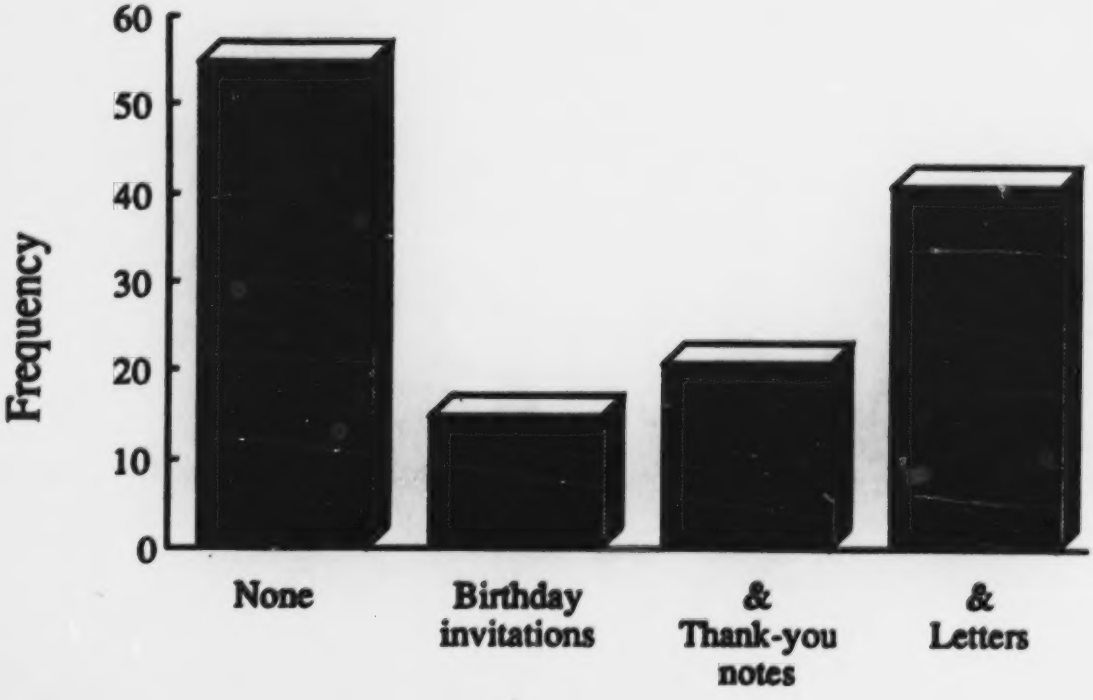

Figure 8. Amount of substantive writing

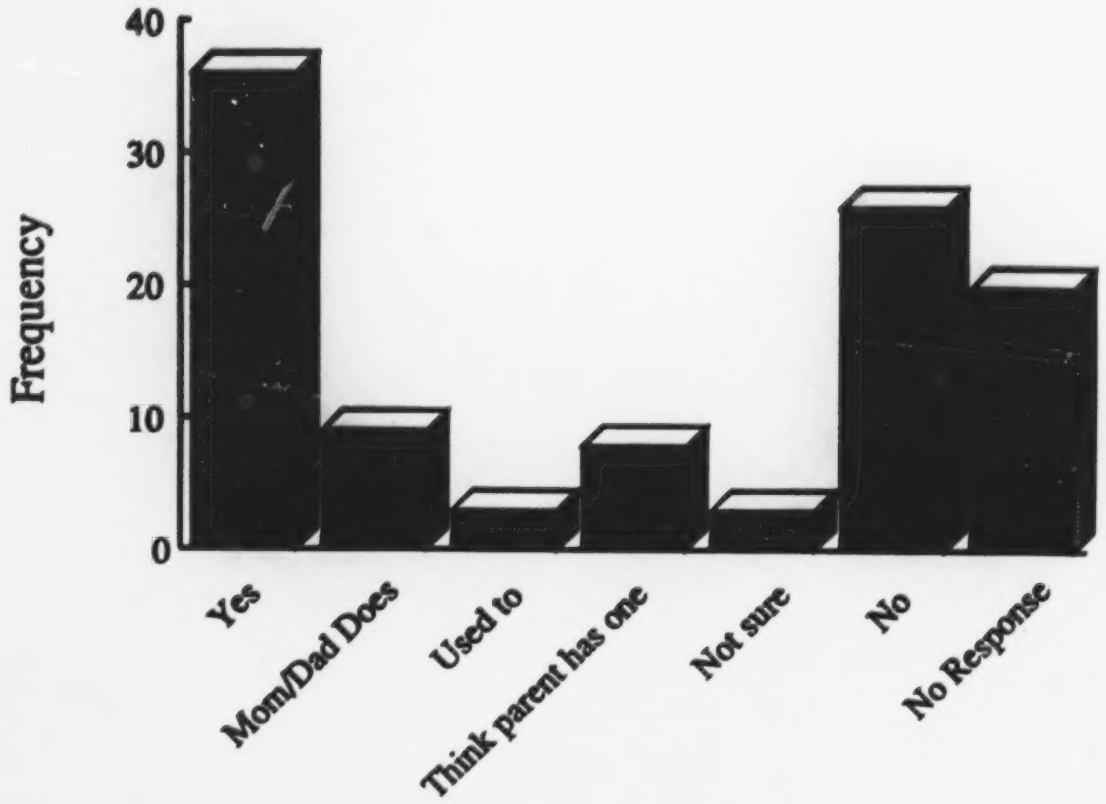

Figure 9. Do you have a library card?

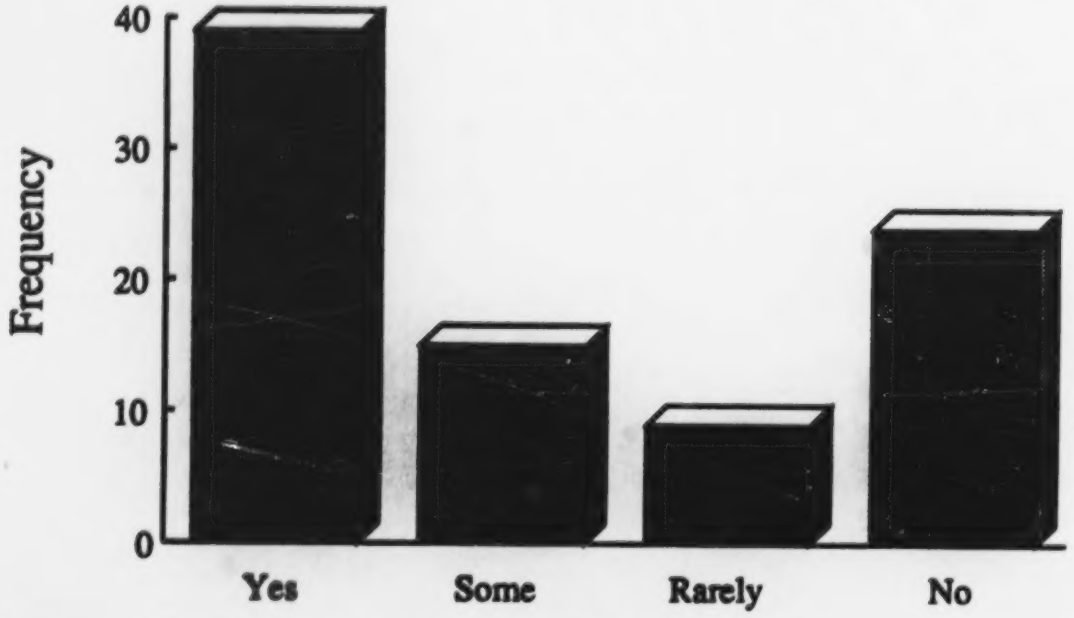

Figure 10. Do you go to the public library?

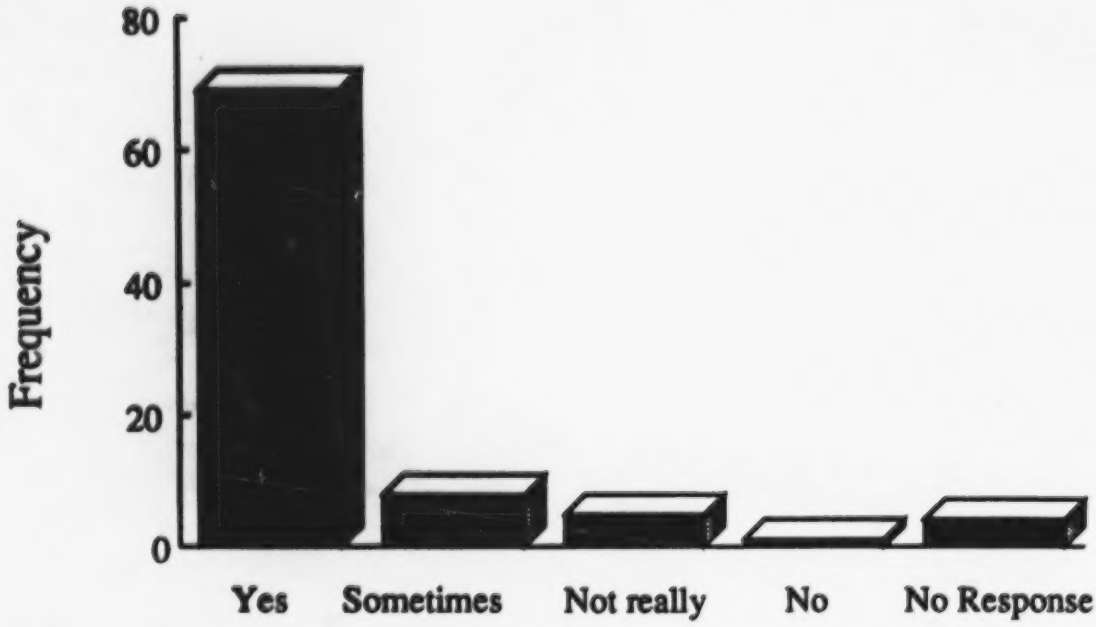

Figure 11. Do you like to write?

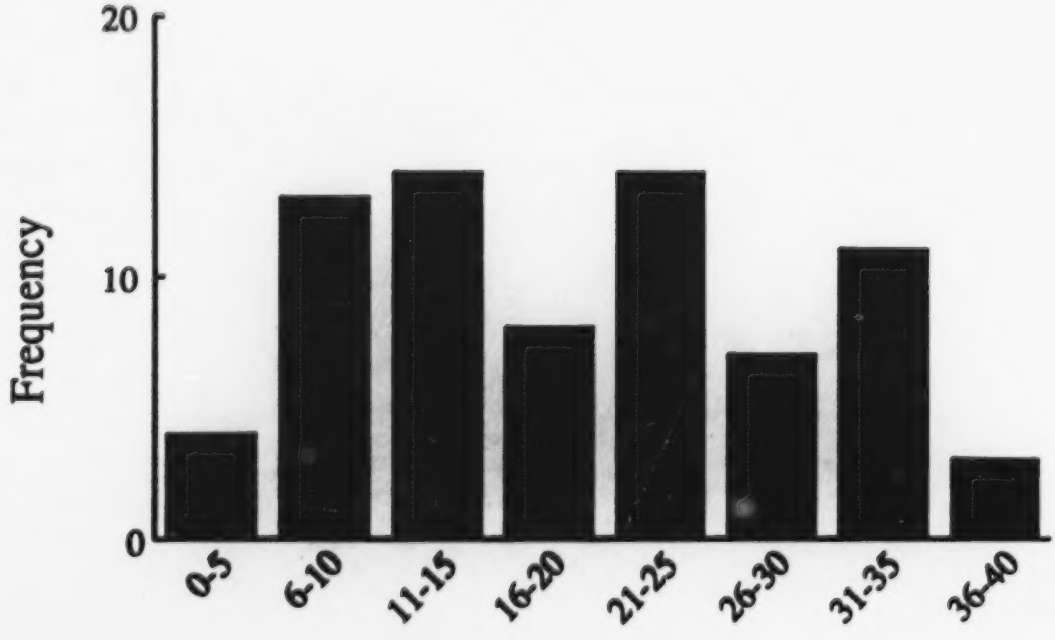

Figure 12. Grade 1 Cloze task scores

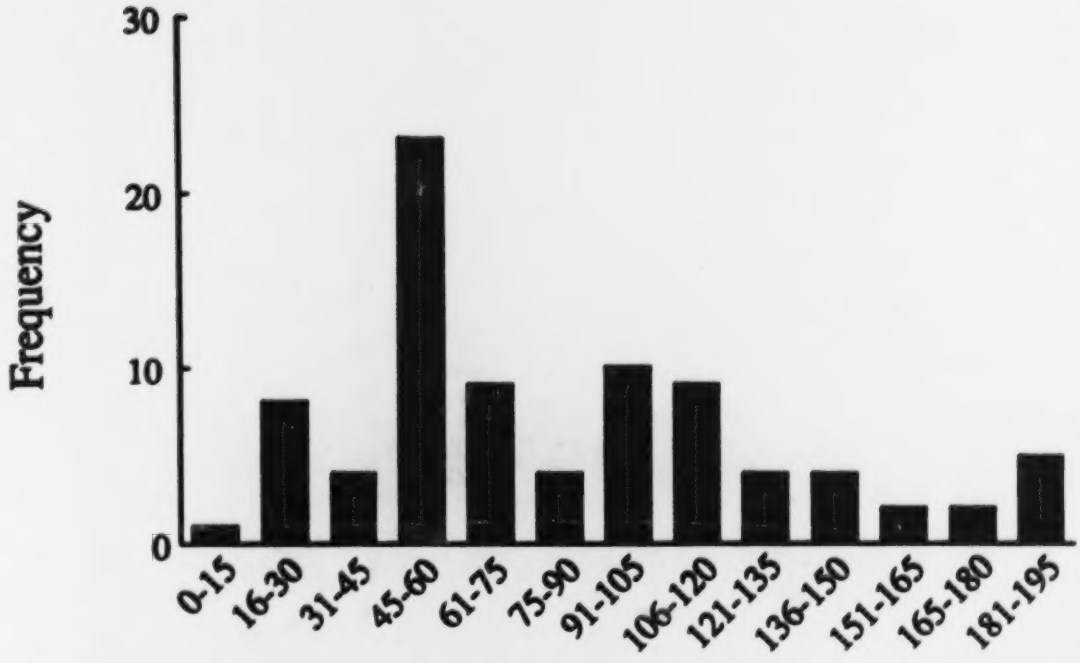

Figure 13. Grade 3 Cloze task scores

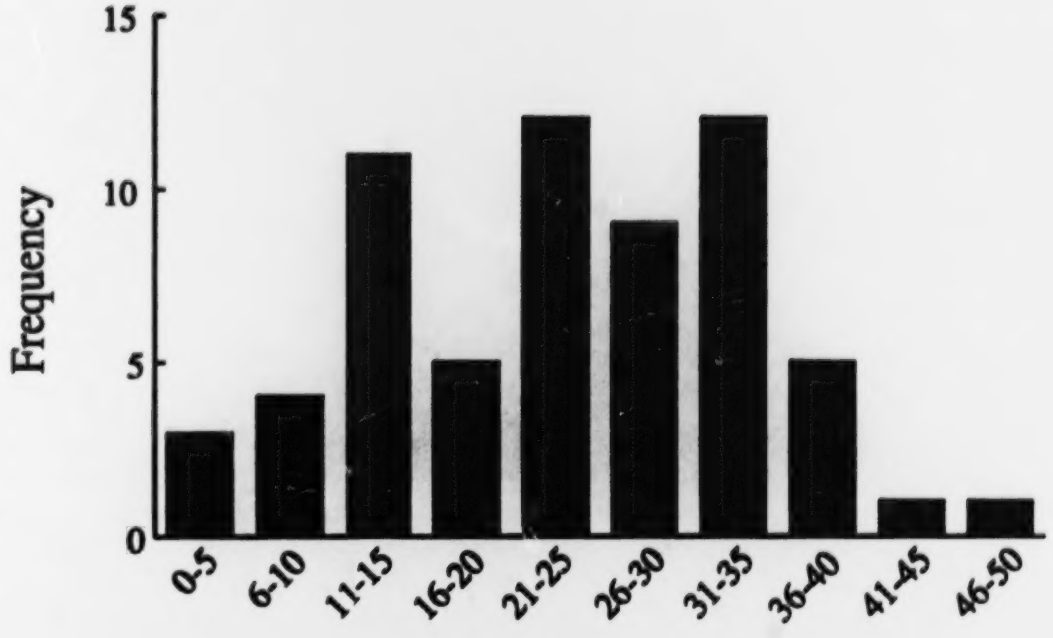

Figure 14. Reading Miscue Inventory scores

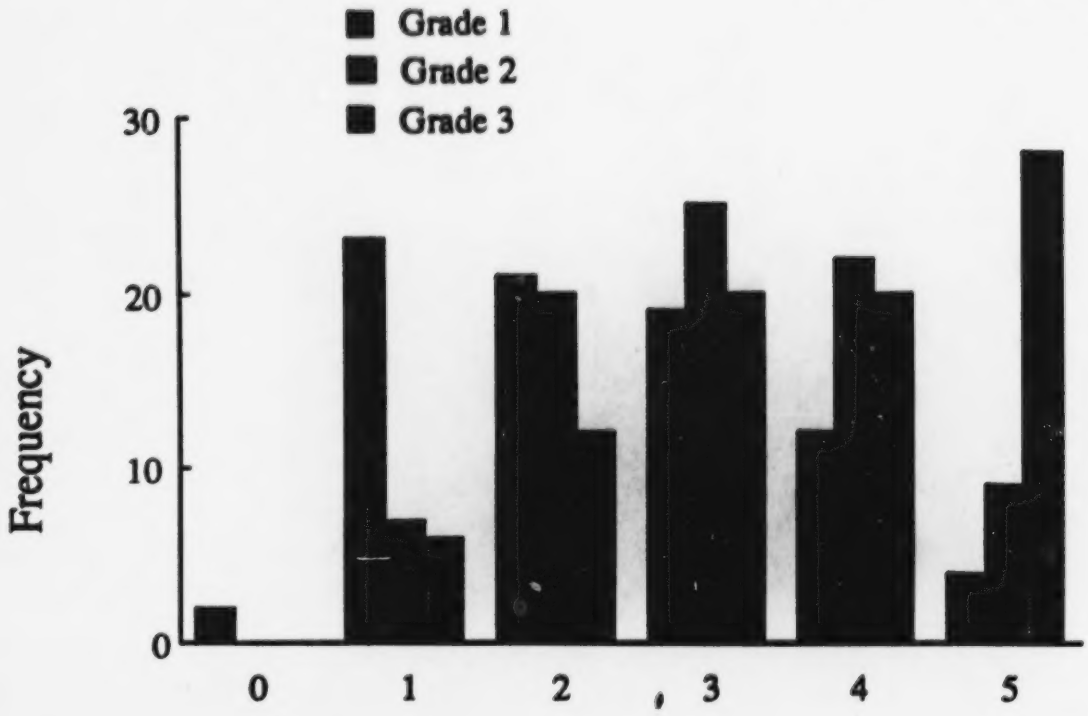

Figure 15. Holistic score for "Going to McDonald's"

Appendix A

Holistic Scoring Standard

One
- papers that are difficult to read in that words are run together.
- papers in which syntax errors make comprehension difficult
- papers that attempt to address the topic but do not successfully deal with the task, ie., papers that list what can be obtained at McDonald's, but do not present a sequence of events.

Two
- papers which do not present a sequence of events, but which give elaborate descriptions of what can be obtained at McDonald's. The children are rewarded for their style, even though they do not receive full points because they have not carried out the task as presented in the initial instructions, or in the verbal prompt.

Three
-papers that respond to the task, that is, they explain the sequence of events in going to McDonald's, but do so in a skeletal or inconsistent manner
- little or no detail is given.

Four
-two of the three sequential elements in going to McDonald's are presented (going to, ordering/eating, leaving) in the correct order.
- details are given, ie., food ordered, payment made, playing in playroom, etc.
- spelling and syntax do not interfere with comprehension.

Five
- all three elements in the sequence are present.
- details are given and various elements in the sequence are elaborated upon.
- expression of feeling is expressed.
- consistent tense is used throughout text.
- word choice is more varied than in category four.
- Note: Only two elements of the sequence need be present if such aspects as style, elaboration, and expression are also present.

Appendix B

Cameron: Is there anything in the newspaper you read?

Mary: Funnies, sometimes.

Cameron: Uh huh, anything else?

Mary: That's all. Sometimes Dad reads these little problems, that children write to, to these people, and the people give them the answers to their problems. Sometimes Dad reads those to me, but I don't read them myself. Dad only read one to me before, I found it sort of, it was a good problem. It was reasonable. It's the kind of thing that you think it's babyish but when you think about it, it isn't.

Cameron: Do you go to the public library?

Mary: Sometimes. Usually Mom gets books for me.

Cameron: You go to the school library too?

Mary: Yes.

Cameron: Do you sometimes go to the library for projects or...?

Mary: For my latest project, my animal project, I did; I went to the library. On my bird project though, we had books at home.

Cameron: What's your favourite book?

Mary: Well.

Cameron: Or is that a very hard question?

Mary: I don't understand. Do you mean right now, or all times, when I was young?

Cameron: You can say either way or both.

Mary: *Circus days again.* I read it once and Mom read it to me nine times, we all read it ten, and it's in pieces. The cover's just about to come off. I don't read it much anymore. I might not like it when I'm older, but I, it will be my favourite. Enid Blyton is my favourite author. I always liked reading Enid Blyton's books and I still do.

Cameron: Well, the next question is, "Who is your favourite author?" but you have already told me.

Mary: Enid Blyton.

Cameron: How did you discover her?

Mary: Well, Mom went to the bookstore one day when I was in Germany and she got me three books. She bought me Peter Pan, something that I forget, and *Circus days again.* And let me tell you, that book looked good then, but as you compare that book right now, you won't believe that that's the same book. You will not believe it. You will not, I mean, then it was pink, now it's brown.

Cameron: It's a well-read book. Who's your favourite writer in the class?

Mary: Me.